

REMARKS

INTRODUCTION

In accordance with the foregoing, the drawings, specification and claims 19-21, 23-25, and 28-37 have been amended. No new matter has been submitted.

Claim 37 would appear to have been indicated as including allowable subject matter, as claim 37 has not been rejected under the cited prior art. Therefore, with the outstanding objection to claim 37 having been overcome, it is respectfully submitted that claim 37 is in proper condition for allowance.

Claims 19-26 and 28-37 are pending and under consideration.

OBJECTIONS TO THE DRAWINGS

In accordance with the outstanding objection, FIG. 3 has been amended to illustrate the movement of the falling edge of a first pulse and the movement of the rising edge of a second or last pulse. As detailed on page 7, lines 23-25, of the present specification, "rather than shifting the rising edge of the first pulse and the falling edge of the last pulse, the edge of any one pulse may be shifted."

Therefore, it is respectfully requested that this objection be withdrawn.

OBJECTIONS TO THE SPECIFICATION AND CLAIMS

In accordance with the Examiner's helpful comments, the specification and claims 33-37 have been amended.

Accordingly, withdrawal of these objections is respectfully requested.

REJECTIONS UNDER 35 USC 102

Claims 19 and 28-33 stand rejected under 35 USC § 102(b) as being anticipated by Sakaue et al. This rejection is respectfully traversed.

Independent claims 19, 32 and 33, with differing scope and breadth, have been amended to clearly recite the generation of the respective adaptive write pulses based on "at least one table storing width data of the first and/or second pulses in a leading and/or trailing space grouping format," using the recitation in claim 32 as an example.

It is respectfully submitted that Sakaue et al. at least fails to disclose this feature.

Sakaue et al. would appear to disclose the delaying of the start of a first pulse in a pulse train and delaying the start of the last pulse in a pulse train to compensate for mark length variation due to heat interference between recorded marks. Thus, although Sakaue et al. may move the starting point of the first and/or last pulses in the recording pulse trains, Sakaue et al. does not store width data of the first and/or last/second pulse in a leading and/or trailing space grouping format. In addition, such information is not stored in at least one table, as claimed.

In discussing an embodiment of the present invention and the problems with conventional systems, which shift rising edges of a first pulse and trailing edges of a last pulse, the present application details that "the magnitudes of the leading and trailing spaces and the magnitude of the present mark may range from 3T to 14T. There can be more than 1,000 possible combinations. Thus, circuits or memories for obtaining the amounts of shift in rising edges of the first pulses and falling edges of the last pulses are necessary with respect to all cases, which complicates the system and hardware. Therefore [in a embodiment of the present invention] the magnitudes of the present mark and the leading and trailing spaces of input NRZI data are grouped into a short pulse group, a middle pulse group and a long pulse group and the grouped magnitudes of the present mark and the leading and trailing spaces are used."

Essentially, Sakaue et al. would appear to conform to the conventional complicated systems requiring complicated hardware.

Conversely, independent claims 19, 32 and 33 sets forth that the first and last/second pulses are based on at least one table that has information in a grouping format.

Sakaue et al. does not use such a table or such grouping format information. In addition, as Sakaue et al. is based on a different system where the first and last/second pulses are shifted on precise information and has the capabilities to precisely shift the same, it is respectfully submitted that it would not have been obvious to drastically modify the shifting scheme to a grouping scheme, as claimed in the present invention.

Therefore, for at least the above, it is respectfully requested that this rejection of independent claims 19, 32 and 33 be withdrawn and independent claims 19, 32 and 33 be allowed. For at least similar rationale, it is respectfully submitted that claims depending from independent claims 19, 32 and 33 are in proper condition for allowance.

Claims 19-22, 24-26 and 34-36 stand rejected under 35 USC § 102 (e) as being anticipated by Hara, U.S. Patent No. 6,044,055. This rejection is respectfully traversed.

Hara would appear to set forth the shifting of a first or last pulse in a pulse train, with the potential having 64 different shifting levels. See FIG. 17 of Hara, which illustrates the delay matrix output 64 different available delay signals. Based on spacing between a present mark and other marks, Hara would appear to shift the rising edge of the first pulse, thereby changing its width, and/or shift the falling edge of a last pulse, thereby also changing its width. However, Hara goes to great lengths to make the number of available shifts/delays available for any pulse width determined by the microprocessor controlling the generation of the pulse train.

Thus, similar to above, it is respectfully submitted that Hara fails to disclose anything related to a table with a grouping format or a grouping table. Further, as the applicant has particularly chosen the term "grouping table" over the broader term "table," it is respectfully submitted that the term "grouping" has to be given consideration as being narrower than a mere table, i.e., within the table there must be some grouping aspects. Hara fails to disclose in any manner how the delay signals are chosen based on the widths of leading or trailing spaces. Rather, Hara would appear to only disclose that the microcomputer makes this decision. As Hara provides for such precise available delays, e.g., 64 different levels of delays, it could be inferred from Hara that there is no need in the same for any groupings, i.e., Hara would appear capable of handling any detected width of leading or trailing spaces without the need of grouping several different widths into one group and another number of widths into another group, for example.

In addition, it is noted that the Office Action sets forth that Hara discloses the claimed "grouping table," in rejecting claims 34-36. However, as noted above, Hara would appear to fail to disclose any table. Rather, Hara would only appear to disclose that the microprocessor of the same will chose the correct delay for generating the correct shifted pulse, i.e., Hara is not specific on how this choosing is performed. Thus, the Office Action has failed to address this particularly claimed feature.

Therefore, for at least the above, it is respectfully requested that this rejection of independent claims 19 and 34-36 be withdrawn and independent claims 19 and 34-36 be allowed. In addition, for at least their dependencies from independent claims 19, it is respectfully submitted that claims depending from independent claim 19 are also in proper condition for allowance.

REJECTION UNDER 35 USC 103

Claim 23 stands rejected under 35 USC § 103(a) as being obvious over Hara, in view of Nishiuchi et al., U.S. Patent No. 5,568,461. This rejection is respectfully traversed.

First, it is respectfully submitted that claim 23 is at least allowable for depending from an allowable independent claim.

Secondly, it is noted that the Office Action sets forth what Nishiuchi et al. discloses, then concludes that it would have been obvious to modify Hara to include the same "to reduce error [caused by] writing to land tracks and groove tracks in the same manner."

However, the Office Action has failed to set forth rationale supporting this conclusion, as the record is absent of evidence that Hara would suffer from this purported error, or that Hara could even be modified to include such solution.

Although Nishiuchi et al. may disclose a feature that solves a problem, there must also be an evidenced link with Hara also needing or desiring that solution. It is respectfully submitted that the same is absent in the outstanding Office Action.

Therefore, for at least the above, it is respectfully requested that this rejection be withdrawn and claim 23 be allowed.

CONCLUSION

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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